

CLAIMS

1/ A method of making a composite panel (100) of sandwich structure and provided with a hinge (106), said panel comprising a stack made up of at least one first skin (101) made of a reinforced thermoplastics material, of a cellular core (102) made of a thermoplastics material, and of a second skin (103) made of a thermoplastics material, in which method said panel (100) is formed by pressing said stack at a pressure lying in the range 10×10^5 Pa to 30×10^5 Pa, the first and second skins (101, 103) being preheated to a softening temperature, said method being characterized in that, after said panel has been formed, an incision is made at a determined place in said panel so as to cut through one (101) of the first and second skins (101, 103), and substantially through the entire thickness of the cellular core, while leaving the other skin (103) intact so that it forms, at said place, the hinge (106) between two portions (107, 108) of the incised panel (100).

2/ A method according to claim 1, characterized in that the incision (104) in said panel (100) is made approximately in the range 10 seconds to 30 seconds after said panel has been formed.

3/ A method according to claim 1 or 2, characterized in that the incision (104) is made by means of a serrated blade (200) which, relative to the plane of said panel (100), firstly moves vertically only so as to penetrate into the skin (101) of said panel, and then moves vertically and horizontally back-and-forth so as to cut through the cellular core (102).

4/ A method according to claim 1 or 2, characterized in that the incision (104) is made by means of two juxtaposed serrated blades (201, 202) which vibrate relative to each other while simultaneously moving

downwards vertically relative to the plane of said panel (100) so as to penetrate into said panel by cutting through a skin (101) and through the cellular core (102) thereof.

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5/ A method according to any one of claims 1 to 4, characterized in that the incision (104) is made in the formed panel while said panel is still in the forming mold.

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6/ A method according to any one of claims 1 to 4, characterized in that the incision (104) is made in the formed panel outside the forming mold.

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7/ A method of making a composite panel (100) of sandwich structure and provided with a hinge (106), said panel comprising a stack made up of at least one first skin made of a reinforced thermoplastics material, of a cellular core made of a thermoplastics material, and of a second skin made of a reinforced thermoplastics material, in which method said panel is formed by pressing said stack at a pressure lying in the range 10×10^5 Pa to 30×10^5 Pa, the first and second skins being preheated to a softening temperature, said method being characterized in that, simultaneously with the forming of said panel (101), at least a portion of an edge (109) of said panel is crushed so as to compact the cellular core (102), and the crushed portion of the edge (109) is cut out to a desired shape so as to obtain a hinge-forming piece (106) suitable for being fixed to another panel.

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8/ A method according to claim 7, characterized in that the portion of the crushed edge (109) is cut out at the end of forming of said panel (100).

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9/ A method according to claim 7, characterized in that the portion of the crushed edge (109) is cut out immediately after said panel (100) has been formed.

5 10/ A method according to any preceding claim, characterized in that, prior to forming said panel (100) a pre-assembly constituted by the stack of at least the first skin (101), of the cellular core (102) and of the second skin (103) is heated.

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11/ A method according to any one of claims 1 to 10, characterized in that, while said panel (100) is being formed, the first and second skins (101, 103) have a forming temperature lying approximately in the range
15 160°C to 200°C.

12/ A method according to any one of claims 1 to 11, said method being characterized in that the first and second skins (101, 103) are made up of glass fiber fabric and of
20 a thermoplastics material.

13/ A method according to claim 12, characterized in that the thermoplastics material is a polyolefin and preferably polypropylene.
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14/ A method according to any one of claims 1 to 13, characterized in that the cellular core (102) of the panel (100) has an open-celled structure of the tubular or honeycomb cell type.
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15/ A panel (100) of sandwich-type composite structure and comprising a stack made up of at least a first skin (101) made of a reinforced thermoplastics material, of a cellular core (102) made of a thermoplastics material,
35 and of a second skin (103) made of a reinforced thermoplastics material, the panel being provided with at

least one hinge, and being made by implementing the method according to any one of claims 1 to 14.